

REMARKS

Reconsideration of the present application is respectfully requested in light of the above amendments to the application and the following remarks.

REVIEW OF THE AMENDMENTS

Table 1 has been corrected to change the typographical error, which had the polymer material being the cell opening agent. The control material used no cell opening agent.

The claims have been amended to recite material properties that distinguish the claimed invention from the cited art. Specifically, the claims have been amended to reflect that the film material is essentially polystyrene free. The claims have also been amended to reflect the breathability and elasticity characteristics of the film.

REVIEW OF THE CITED REFERENCES

BERRY

Berry discloses mechanical aperturing, not cell opening agents, as method of forming apertures. The apertures of Berry are fully open and thus do not provide a film with desirable fluid barrier properties. Berry states in the Examples that “the coated film was stretched by 100%” [col. 9, line 12] prior to lamination. Berry does not disclose stretching beyond 100%. The mechanical aperturing by Berry results in a film with ragged edged apertures (compared to the smooth edge cells formed by cell opening agents) that cannot be sufficiently stretched beyond such limit without tearing the apertures and causing the fabric to rip. Therefore, the film of Berry cannot provide the high elasticity needed to produce a material for use in a laminate with high

stretch qualities. The film material of the present invention is stretched some 300-600% before lamination, a level that is not achievable with the film of Berry, because Berry's film would break under the strain. The material of the present invention can be used at such stretch levels, making it useful for incorporation into high elasticity laminates to improve the overall stretch characteristics.

While Berry discloses in the specification that the film can be apertured, the Examples which enable the invention show that the nonwoven Bemliese fabric is apertured and the film is not apertured. The Examples purporting to support the invention show film that is not apertured.

MILLER

Miller discloses a material having 5-49% polystyrene that is subjected to a blowing agent. Miller does not disclose stretching of the apertured material. Addition of polystyrene leads to a loss of elasticity. The material of the present invention does not use polystyrene in any appreciable quantity. The material of Miller is a foam article which is designed for oil pickup, not elasticity, and Miller does not disclose, teach or suggest stretch bond lamination to another material.

SHAH ET AL.

The material of Shah et al. is used in a spunbond/meltblown/spunbond ("SMS") process [col. 7, line 49]. Shah et al. does not mention aperturing and does not mention stretch bonded lamination.

CHEONG

Cheong discloses a material that has open cells and is not stretch laminated. The bandage of Cheong does not have the improved stretch or breathability characteristics as the present invention. In contrast, the present invention has at least a portion of the cells closed, which closed cells can contain a gaseous or other state of material. Cheong could not contain a gas. Moreover, the additional facings of the laminate help to control the kinetics of timed release.

REVIEW OF THE REJECTIONS

Claims 1-13, 20-25, and 29 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Berry in view of Miller. The amended claims recite a film being breathable and having elasticity properties that are not obvious in view of Berry and Miller. The references do not demonstrate a similar level of stretch as the claimed present invention. Also, mechanical aperturing relatively large open cell apertures completely through the material produces a material that is a poor fluid barrier. Berry does not show aperturing of the film. Miller uses a material with a substantial amount of polystyrene that does not have appreciable stretch. It would not have been obvious to combine Berry and Miller as they relate to two different types of materials and objectives.

Claims 1-13, 21, and 29 have been rejected under 35 U.S.C. §102(a and e) as being anticipated by Miller. Miller discloses in his all of his Examples (at col. 5, lines 50-55 and lines 59-61; col. 6, lines 40-42, lines 49-50 and lines 61-65; col. 7, lines 6-7) materials that contain appreciable amounts of polystyrene. The elasticity of the present invention likely could not be achieved with the inclusion of the levels of polystyrene disclosed by Miller. Accordingly, Miller

does not anticipate the present invention.

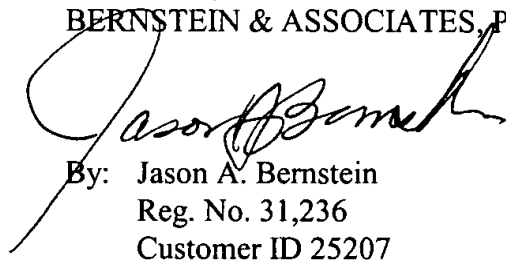
Claims 26-28, have been rejected under 35 U.S.C. §103(a) as being unpatentable over Berry in view of Miller as applied to Claims 1-13, 20-25, and 29 and further in view of Shah et al. Shah et al. is cited as teaching polyurethanes as well as styrenic triblock polymers to make elastomeric films. Shah et al. does not show aperturing and does not show the material being used in a stretch bonded laminate. It would not have been obvious to combine the mechanical aperturing of Berry, the polystyrenic material of Miller and the polyurethane of Shah et al. to create the material of the present invention and having the elasticity and breathability needed to form the articles of the present invention.

Claims 14-19, have been rejected under 35 U.S.C. §103(a) as being unpatentable over Berry in view of Miller as applied to Claims 1-13, 20-25, and 29 and further in view of Cheong. Cheong discloses the use of open cells. In contrast, the present invention has at least a portion of the cells being closed, which enables greater control over release kinetics. Additionally, with open cells, Cheong could not effectively contain a gas. Accordingly, the cited patents do not disclose, teach or suggest the present material as claimed. The references do not show a material that can release a gas, liquid or solid and which also has the breathability or stretch characteristics of the present invention.

Therefore, Applicant submits that the new and amended claims overcome the Examiner's rejections and objections and are in condition for allowance, and Applicant respectfully requests the same. Should the Examiner have questions or suggestions which will put this application in line for allowance, he or she is requested to contact the undersigned attorney.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made."

Respectfully submitted,
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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Amendments to the Specification:

TABLE 1

EXAMPLE NO.	SAMPLE DESCRIPTION	AIR PERMEABILITY 38cm ² head cfm	WVTR g/m ² /24hrs	ELOGATED LOAD AT BREAK (machine direction) gram	ELONGATION AT BREAK (machine direction) %
1	Kraton® 6912 + 0.5% Celogen®	27	2361	519	607
2	Kraton® 6588 (control)	NO DATA	34	564	663
3	Estane® 58245 + 1% Celogen® + 5% EVA	14	2506	1985	308
4	Estane® 58245 + 0.5% Celogen®	1	1175	5000	579
5	Celogen Estane® 58245 (control)	1	1117	5001	392

Amendments to the Claims:

1. (Amended) A breathable cellular elastomer film or filament material having cells created therein by a cell opening agent, said material being essentially polystyrene free and having at least a portion of said cells being closed, said material being at least partially air permeable, capable of transmitting water vapor therethrough and being elongatablebreathable and having an elongation at break of from about 300 to about 600 percent.
2. (Reiterated) The breathable cellular elastomer film or filament material of Claim 1, wherein said material is a film material.

3. (Reiterated) The breathable cellular elastomer film or filament material of Claim 1, wherein said film or filament material comprises a material selected from the group consisting of a block copolymer having the general formula A-B-A' or A-B, where A and A' are each a thermoplastic polymer endblock which contains a styrenic moiety and where B is an elastomeric or rubber polymer midblock such as a conjugated diene or a lower alkene polymer elastomeric and a A-B-A-B tetrablock copolymer.
4. (Reiterated) The breathable cellular elastomer film or filament material of Claim 1, wherein said cell opening agent is an azodicarbonamide, water, a low boiling point solvent, a fluorocarbon, a mixture of an isocyanate and a polyol or mixtures thereof.
5. (Reiterated) The breathable cellular elastomer film or filament material of Claim 1, further comprising at least one layer of an extensible material laminated to said filament material, said filament material having at least one aperture defined therein created by a cell opening agent.
6. (Reiterated) The breathable cellular elastomer film or filament material of Claim 5, wherein said cell opening agent is a material capable of forming openings in said film.
7. (Reiterated) The breathable cellular elastomer film or filament material of Claim 5, wherein said cell opening agent is an azodicarbonamide, water, a low boiling point solvent, or the gas liberated by the reaction of a mixture of an isocyanate and a polyol with water.
8. (Reiterated) The breathable cellular elastomer film or filament material of Claim 5, wherein said cells are open to the film surface, partially open or closed.

9. (Reiterated) The breathable cellular elastomer film or filament material of Claim 5, wherein said composite material has an average water vapor transmission rate of from about 300 to about 20,000 g/m²/24 hours.
10. (Reiterated) The breathable cellular elastomer film or filament material of Claim 5, wherein said composite material has an average water vapor transmission rate as measured by the INDA (Association of the Nonwoven Fabrics Industry) test procedure IST-70.4-99 of from about 300 to about 20,000 g/m²/24 hours.
11. (Reiterated) The film material of Claim 2, wherein said film material is formed by casting, extrusion or by mixing and dispensing to a moving belt methods.
12. (Reiterated) The film material of Claim 2, wherein said cell opening agent is an azodicarbonamide, water, a low boiling point solvent, a fluorocarbon, a mixture of an isocyanate and a polyol or mixtures thereof.
13. (Reiterated) The film material of Claim 2, wherein said cells are open to the film surface, partially open or closed.
14. (Reiterated) The material of Claim 2, wherein said material has cells created therein by a cell opening agent, at least one of said cells being closed, said closed cells containing a solid, liquid or gas capable of timed release.
15. (Reiterated) The breathable cellular elastomer film or filament material of Claim 14, wherein said material is a filament material having cells created therein by a cell opening agent, said filament material being at least partially air permeable, capable of transmitting water vapor therethrough and being elongatable.

16. (Reiterated) The breathable cellular elastomer film or filament material of Claim 14, wherein said solid, liquid or gas is released in response to an external stimulus.
17. (Reiterated) The breathable cellular elastomer film or filament material of Claim 16, wherein said external stimulus is increased temperature from a user.
18. (Reiterated) The breathable cellular elastomer film or filament material of Claim 16, wherein said solid, liquid or gas is active.
19. (Reiterated) The breathable cellular elastomer film or filament material of Claim 16, wherein said solid, liquid or gas is capable of inhibiting yeast filament formation.
20. (Reiterated) The breathable cellular elastomer film or filament material of Claim 1, further comprising at least one layer of an extensible material laminated to said elastomer material, said elastomer material having at least one aperture defined therein created by a cell opening agent.
21. (Reiterated) The breathable cellular elastomer film or filament material of Claim 12, wherein said film is formed by casting or extrusion methods.
22. (Reiterated) The breathable cellular elastomer film material of Claim 2, further comprising at least one layer comprised of an extensible material laminated to said elastomeric film to form a laminate, said elastomeric film having apertures created therein by a cell opening agent, said laminate being formed into a personal care product.
23. (Reiterated) The breathable cellular elastomer film or filament material of Claim 22, wherein said laminate has an average water vapor transmission rate as measured by the INDA (Association of the Nonwoven Fabrics Industry) test procedure IST-70.4-99 of from about 300 to about 20,000 g/m²/24 hours.

24. (Reiterated) The breathable cellular elastomer film or filament material of Claim 22, wherein said laminate is formed into a bandage, a wound dressing, a diaper, an incontinence garment, a panty shield or liner, a perspiration shield a surgical gown or industrial workwear.
25. (Amended) A breathable cellular elastomer material having cells created therein by a cell opening agent, said material being at least partially air permeable, capable of transmitting water vapor therethrough and being elongatable, wherein said material is incorporated into a laminate material produced by a method, comprising:
- a) providing a layer of a spunbond material;
 - b) providing a layer of an elastomeric film being essentially polystyrene free and having apertures formed therein by mixing a polymer material with a cell opening agent to form a mixture and extruding said mixture through a die such that apertures are formed therein, said apertures comprising cells, at least a portion of said cells being closed; and,
 - c) laminating said elastomeric film and said spunbond.
26. (Amended) A breathable cellular elastomer material having cells created therein by a cell opening agent, said material being essentially polystyrene free and at least partially air permeable, capable of transmitting water vapor therethrough and being elongatable, wherein said material is incorporated into a laminate material produced by a method, comprising:
- a) providing an isocyanate material;
 - b) providing a polyol material;
 - c) providing a catalyst material;

- d) providing an effective amount of water;
 - e) mixing said polyol material, catalyst material and water to form a mixture;
 - f) mixing the mixture of step e) with said isocyanate material to form a second mixture;
 - g) dispensing said second mixture through a die head onto a surface to form a cellular foam at least a portion of said foam having closed cells; and,
 - h) laminating said foam to at least one layer of a non-extensible material so as to form a breathable elastomeric material.
27. (Reiterated) The material of Claim 26, further comprising curing said foam.
28. (Reiterated) The material of Claim 26, further comprising adjusting the polyol functionality to adjust the adhesive level desired.
29. (Amended) A breathable cellular elastomer film or filament material having cells created therein by a cell opening agent, said material being at least partially air permeable, capable of transmitting water vapor therethrough and being elongatable, wherein having apertures formed therein by a process, comprising:
- a) providing an elastomeric essentially polystyrene free polymer material;
 - b) providing a cell opening material capable of releasing a gas;
 - c) mixing said polymer material and said cell opening material to form a mixture; and,
 - d) extruding said mixture through an extrusion die such that said cell opening material produces a gas whereby apertures are formed at least partially within the extruded material, at least a portion of said apertures being closed cells.
30. (New) A laminate material, comprising:

- a) a layer of an elastomer film or filament material being essentially polystyrene free having cells created therein by a cell opening agent, at least a portion of said cells being closed, said material being breathable and having an elongation at break of from about 300% to about 600%; and,
 - b) at least one layer of a spunbond material laminated to said elastomer film or filament material.
31. (New) A personal care article, comprising:
- a) a layer of an elastomer film or filament material being essentially polystyrene free having cells created therein by a cell opening agent, at least a portion of said cells being closed, said material being breathable and having an elongation at break of from about 300% to about 600%; and,
 - b) at least one layer of a spunbond material laminated to said elastomer film or filament material.
32. (New) A stretchable top sheet for use in an article worn to manage fluids, comprising:
- a) a layer of an elastomer film or filament material being essentially polystyrene free and having cells created therein by a cell opening agent, at least a portion of said cells being closed, said material being breathable and having an elongation at break of from about 300% to about 600%; and,
 - b) at least one layer of a spunbond material laminated to said elastomer film or filament material.